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EXAMINER

JACKSON, MONIQUE R

ART UNIT

PAPER NUMBER

1787

MAIL DATE

DELIVERY MODE

04/12/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/506,843

**Applicant(s)**

TAYLOR, DAVID GRAHAM

**Examiner**

Monique R. Jackson

**Art Unit**

1787

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7, 10-12, 14-19, 23-27, 40 and 41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-12, 14-19, 23-27, 40 and 41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. The amendment filed 12/29/09 has been entered. Claims 8-9, 13, 20-22, 28-39 have been canceled. Claims 1-7, 10-12, 14-19, 23-27 and 40-41 are pending in the application. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Priority***

2. Upon further review of the foreign priority documents, it is noted that the instant claims as currently recited are not fully supported by the foreign priority applications, particularly the claimed thickness of about 0.05 microns, and the claimed permeability properties. Hence, the claimed invention is not afforded the benefit of the earlier foreign priority dates and the effective date of the application in terms of prior art is 3/6/03, the filing date of PCT.

***Claim Rejections - 35 USC § 103***

3. Claims 1-7, 10-12, 14-19, 23-27 and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP1270703 (EP'703; please refer to English equivalent US2003/0114626A for the below cited sections) in view of WO'647 and WO'378.

4. EP'703 teaches the use of polyurethane reactive hot-melt adhesives for the production of cork wine stoppers wherein a layer of the molten hot-melt adhesive is applied to one or both faces of a molding of agglomerated cork and then a cork disc made of natural cork is applied onto the still liquid, softened hot-melt adhesive (Abstract; Paragraph 0013; Examples; Claims.) EP'703 teaches that the hot-melt adhesive preferably consists of polyurethane formed from the reaction of polyols with monomeric diisocyanates or polyisocyanates, and may further contain conventional additives (Paragraph 0014, 0023; Claims.) EP'703 fails to teach an additional

barrier layer having lower oxygen permeability than the reactive hot melt polyurethane as claimed. However, as discussed in a previous office action, WO'647 and WO'378 teach the incorporation of barrier layers or coatings applied to cork wine stoppers to improve the oxygen or liquid barrier properties of the cork stoppers. WO'647 teaches the use of EVOH and metallized polymers as preferred barrier materials and WO'378 teaches that the thickness can be modified based upon the desired barrier properties for a particular end use. Hence, one having ordinary skill in the art at the time of the invention would have been motivated to incorporate a barrier layer or coating as taught by WO'647 and/or WO'378 in the cork wine stoppers taught by EP'703 to improve the oxygen and liquid barrier properties of the stopper, wherein one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum barrier material taught by the prior art and coating or layer thickness and coverage to provide the desired barrier or oxygen permeability properties for a particular end use given the predictable results and reasonable expectation of success, wherein thickness of similar magnitude to those taught by the prior art would have been obvious. With regards to the Claim 11, though EP'703 teaches that the barrier polymer may further comprise conventional additives including fillers and pigments, EP'703 does not teach the claimed additives however metal oxides are an obvious species of conventional additives or pigments utilized in the art and would have been obvious to one having ordinary skill in the art at the time of the invention. With respect to the claimed shape limitations, the Examiner takes the position that the teachings of prior art clearly suggest a cork stopper having a cylindrical shape and further notes that a conventional rounded or beveled face as claimed would have been obvious to one having ordinary skill in the art at the time of the invention, wherein a step of molding or

pushing the stopper in tension into a "cup" to form the desired shape would have been obvious at the time of the invention.

5. Claims 1-7, 10-12, 14-19, 23-27 and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/64647 (WO'647) in view of EP'703.

6. As discussed in a prior office action, WO'647 teaches a method for producing a coating or diffusion layer on a substrate such as a cork for use in contact with food or beverage, wherein said coating or diffusion layer prevents or inhibits passage therethrough, such as from a cork to an alcoholic beverage like wine, and limits oxygen permeability (Abstract; Page 1-2.) WO'647 teaches that the method comprises applying an effective amount of a barrier polymer to the surface of the substrate, wherein the barrier polymer may be in the form of a polymer film and may be those selected from the listing of polymers on pages 4-5, including polyurethane, polyethylene vinyl alcohol (EVOH), laminate films comprising polyolefins, polyethylene terephthalate (PET), EVOH, and/or polyamides (Pages 3-5.) WO'647 also teaches that the polymers can be applied to the cork by conventional methods including reactive adhesion and melt polymer application, and the polymers may further comprise lubricants (reads upon "additives") to allow the coated cork to be easily inserted and removed from the bottle (Page 6.) WO'647 teach examples utilizing a laminate comprising polyethylene/metallized PET/polyethylene, as well as a laminate comprising polyethylene/polyethylene vinyl alcohol/polyethylene (Examples 8-9). WO'647 also provides an example utilizing polyurethane formed from a polyurethane coating applied to the cork by dipping the cork into the coating and cured at 40°C (Example 4.) Though WO'647 teaches polyurethane as well as reactive adhesion and melt polymer applications, WO'647 does not teach the use of reactive hot melt polyurethane

as instantly claimed. However, EP'703 teaches the use of reactive hot melt polyurethane adhesive and the benefits of utilizing the reactive hot melt adhesive specifically in forming cork stoppers for beverage or wine bottles wherein the reactive hot melt adhesive comprises polyurethane formed from the reaction of polyols with monomeric diisocyanates or polyisocyanates as in the instant invention (Abstract; Paragraphs 0004-0014, 0023; Examples; Claims.) EP'703 teaches that the adhesive may further contain conventional additives including fillers, pigments, plasticizers and tackifying resins (Paragraph 0023.) EP'703 teaches that the reactive hot melt polyurethanes permit moldings of agglomerated cork and natural cork to be adhesion-bonded to one another in such a way that high-quality corks can be produced that meet FDA regulations and are suitable for sealing beverage bottles for high-quality beverages (Paragraphs 0010-0011; 0024.) Hence, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize the reactive hot melt polyurethane compositions taught by EP'703 in producing cork stoppers taught by WO'647 as an adhesive adjacent to the cork substrate, an adhesive on either or both faces of the cork substrate, or an internal adhesive layer within the cork stopper as taught by EP'703 and/or as the polyurethane barrier layer covering the cork stopper as taught by WO'647, with any of the polymers or other barrier materials taught by WO'647 such as EVOH, which has a lower oxygen permeability than polyurethane, given the predictable results and reasonable expectation of success. In terms of the barrier properties, though WO'647 teaches that the polymer coating provides a barrier and limits oxygen permeability, WO'647 does not specifically teach the coating thickness and specific oxygen permeability properties as claimed. However, one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine

the optimum barrier layer thickness to provide the desired barrier properties based on the barrier material selected and taught by WO'647 given the predictable results. In terms of Claim 11, though WO'647 teach that the barrier polymer may further comprise lubricants, WO'647 does not teach the claimed additives however powdered PTFE is an obvious species of lubricant utilized in the art and metal oxides are an obvious species of conventional additive utilized to provide color as well as other desired properties. With respect to the claimed shape limitations, the Examiner takes the position that the teachings of WO'647 and EP'703 clearly suggest a cork stopper having a cylindrical shape and further notes that a conventional rounded or beveled face as claimed would have been obvious to one having ordinary skill in the art at the time of the invention, wherein a step of molding or pushing the stopper in tension into a "cup" to form the desired shape would have been obvious at the time of the invention.

7. Claims 1-7, 10-12, 14-19, 23-27 and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over King (USPN 3,821,135) in view of EP'703.
8. As discussed in the prior office action, King teaches a granular cork-polyurethane composition and products produced from the composition wherein cork particles and polyurethane are mixed and molded by application of heat and pressure to produce a molded article having a desired shape formed from polyurethane impregnated cork particles (Entire document; particularly Abstract; Col. 2, line 15-Col. 4, line 64; Col. 5, line 28-33.) King teaches that typical molded articles include gaskets and seals as well as others recited at Col. 6, lines 4-13, wherein the Examiner takes the position that the recitation of "seals" as well as some of the articles listed read upon the broad term "stopper" given that they are able to be "inserted into a receptacle to close an opening in the receptacle" (Col. 6, lines 4-15.) King further teaches that

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the molded article may be coated with a polyvinylchloride plastisol; or another layer of material, such as metal and plastic, may be adhesively bonded to the shaped article by pressing the layer of material into or in contact with the shaped cork article and employing sufficient heat to soften the polyurethane resin to securely bond the layer to the article formed from the impregnated cork particles (Col. 9, line 13-27.) King also teaches that the layer may be securely bonded by only heat and pressure, and that an alternative method involves placing the layer of material in contact with the impregnated cork particles when the particles are deposited in the mold cavity and then pressing the layer into the particles during the molding or shaping operation (Col. 9, lines 16-25; hence reads upon the broad limitation of "pushed into a cup".) King teaches that the polyurethane is an excellent adhesive when employed in this manner (Col. 9, lines 25-27.) King also teaches that one can coat an adhesive on one or both surfaces of the layer and article which intercontact and, with little pressure, bond the two together in a conventional manner wherein suitable adhesives including polyurethane resins (Col. 9, lines 27-35.) Hence, King teaches a molded article, such as gaskets or seals or other shaped article including those suitable as a "stopper", formed from polyurethane resin-impregnated cork particles that are molded into a desired shape and bonded to a layer of material such as metal or plastic via the polyurethane surface present on the molded article surface, or via a separate adhesive coating layer which may also be polyurethane; wherein the Examiner takes the position that the adhesive surface or coat along with the layer of material read upon the claimed "barrier layer", and the metal or the plastic or the PVC coating reads upon the sub-layer having lower oxygen permeability. Though King teaches the use of polyurethane, King does not specifically teach that the polyurethane



coating or the polyurethane adhesive is a reactive hot melt adhesive as defined by the instant invention.

9. However, EP'703 teaches the use of reactive hot melt polyurethane adhesive and the benefits of utilizing the reactive hot melt adhesive specifically in forming cork stoppers for beverage or wine bottles wherein the reactive hot melt adhesive comprises polyurethane formed from the reaction of polyols with monomeric diisocyanates or polyisocyanates as in the instant invention (Abstract; Paragraphs 0004-0014, 0023; Examples; Claims.) EP'703 teaches that the adhesive may further contain conventional additives including fillers, pigments, plasticizers and tackifying resins (Paragraph 0023.) EP'703 teaches that the reactive hot melt polyurethanes permit moldings of agglomerated cork and natural cork to be adhesion-bonded to one another in such a way that high-quality corks can be produced that meet FDA regulations and are suitable for sealing beverage bottles for high-quality beverages (Paragraphs 0010-0011; 0024.) Hence, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize the reactive hot melt polyurethane compositions taught by EP'703 in producing cork "stoppers" taught by King as an adhesive adjacent to the cork substrate, an adhesive on either or both faces of the cork substrate, or an internal adhesive layer within the cork stopper as taught by EP'703 and/or as the polyurethane barrier layer covering the cork stopper as taught by King, with any of the polymers or other barrier materials taught by King or functionally equivalent barrier polymers conventionally utilized in the art such as EVOH, which have lower oxygen permeability than polyurethane, given the predictable results and reasonable expectation of success. In terms of the barrier properties, though King does not specifically teach the coating thickness and specific oxygen permeability properties as claimed, one having ordinary skill in

the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum barrier layer thickness to provide the desired barrier properties, such as oxygen permeability, as discussed in the prior office action, based on the barrier material selected given the predictable results. In terms of Claim 11, though EP'703 teaches that the reactive hot melt adhesive may further comprise conventional additives such as fillers and pigments, King and EP'703 do not teach the claimed additives however metal oxides are an obvious species of conventional additive utilized in the art to provide color as well as other desired properties.

10. With respect to the claimed shape limitations, though King teaches that the cork composition can be formed into various molded articles including gaskets and seals, King does not specifically teach the claimed stopper cylindrical shape with two faces. However, given that cork compositions are conventionally utilized to form wine bottle stoppers having the claimed cylindrical shape, one having ordinary skill in the art at the time of the invention would have been motivated to determine the desired shape of the molded cork article for a particular end use wherein the claimed structures are obvious structures for a cork article and typically utilized in the art as stoppers for wine bottles as evidenced by EP'703, including rounded or beveled faces, a face with an incorporated gasket, coatings on one or both faces, partial coating, and coatings parallel to the faces on the faces or within the cork substrate as taught by EP'703.

***Response to Arguments***

11. Applicant's arguments filed 12/29/09 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 10:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Monique R Jackson/  
Primary Examiner, Art Unit 1787  
April 8, 2010